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(12) **United States Design Patent** (10) **Patent No.:** **US D983,059 S**  
**Takahashi et al.** (45) **Date of Patent:** **\*\* Apr. 11, 2023**

(54) **GAS CONCENTRATION DETECTION SENSOR**

30, 2021, available from wayback <https://www.ngk-NOxinsulators.com/en/product/nox.html> (Year: 2021).\*

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(57) **CLAIM**

The ornamental design for a gas concentration detection sensor, as shown and described.

(\*\*) Term: **15 Years**

(21) Appl. No.: **29/728,082**

**DESCRIPTION**

(22) Filed: **Mar. 16, 2020**

(30) **Foreign Application Priority Data**

Sep. 18, 2019 (JP) ..... 2019-020871  
Sep. 18, 2019 (JP) ..... 2019-020877  
Sep. 18, 2019 (JP) ..... 2019-020882

FIG. 1 is a perspective view of a first embodiment of a gas concentration detection sensor showing our new design; FIG. 2 is a front view thereof, the back view thereof being a right-and-left reversed image;

(51) **LOC (14) Cl.** ..... **10-04**

FIG. 3 is a top view thereof, the bottom view thereof being a same image;

(52) **U.S. Cl.**  
USPC ..... **D10/81**

FIG. 4 is a right view thereof;

(58) **Field of Classification Search**  
USPC ..... D10/70, 46, 81, 96-103  
(Continued)

FIG. 5 is a left view thereof;

FIG. 6 is an enlarged partial perspective view thereof indicated in FIG. 1;

(56) **References Cited**

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(Continued)

FIG. 7 is an enlarged cross-sectional view thereof taken along the line 7-7 as indicated in FIG. 2;

FIG. 8 is an enlarged cross-sectional view thereof taken along the line 8-8 as indicated in FIG. 5;

FIG. 9 is a perspective view of a second embodiment of a gas concentration detection sensor showing our new design; FIG. 10 is a front view thereof, the back view thereof being a right-and-left reversed image;

FIG. 11 is a top view thereof, the bottom view thereof being a same image;

FIG. 12 is a right view thereof;

FIG. 13 is a left view thereof;

FIG. 14 is an enlarged partial perspective view thereof indicated in FIG. 9;

FIG. 15 is an enlarged cross-sectional view thereof taken along the line 15-15 as indicated in FIG. 10;

FIG. 16 is an enlarged cross-sectional view thereof taken along the line 16-16 as indicated in FIG. 13;

FIG. 17 is a perspective view of a third embodiment of a gas concentration detection sensor showing our new design;

(Continued)

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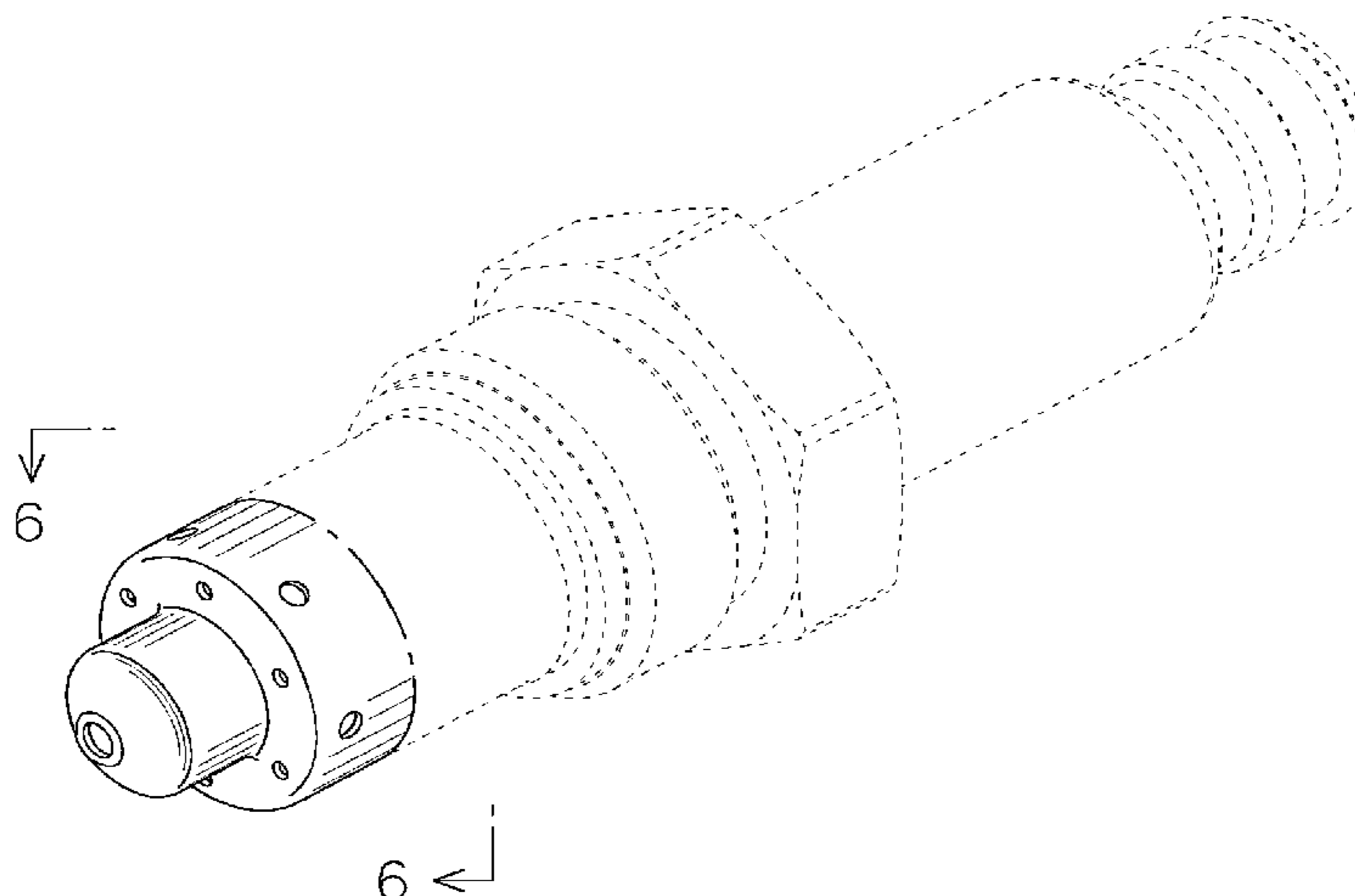


FIG. 18 is a front view thereof, the back view thereof being a right-and-left reversed image;  
 FIG. 19 is a top view thereof, the bottom view thereof being a same image;  
 FIG. 20 is a right view thereof;  
 FIG. 21 is a left view thereof;  
 FIG. 22 is an enlarged partial perspective view thereof indicated in FIG. 17;  
 FIG. 23 is an enlarged cross-sectional view thereof taken along the line 23-23 as indicated in FIG. 18; and,  
 FIG. 24 is an enlarged cross-sectional view thereof taken along the line 24-24 as indicated in FIG. 21.  
 The dot-dash lines immediately adjacent the shaded areas represent the bounds of the claimed design while all other broken lines are included for the purpose of illustrating portions of the gas concentration detection sensor, the broken lines form no part of the claimed invention.

**1 Claim, 24 Drawing Sheets**

(58) **Field of Classification Search**

CPC ..... G01N 33/0006; G01N 33/0075; G01N 27/4077; G01N 27/4071; G01N 27/4117; G01N 33/0037; G01N 27/409; G01N 27/41; G01N 33/0054; G08B 17/117; Y02A 50/20

See application file for complete search history.

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Fig.1

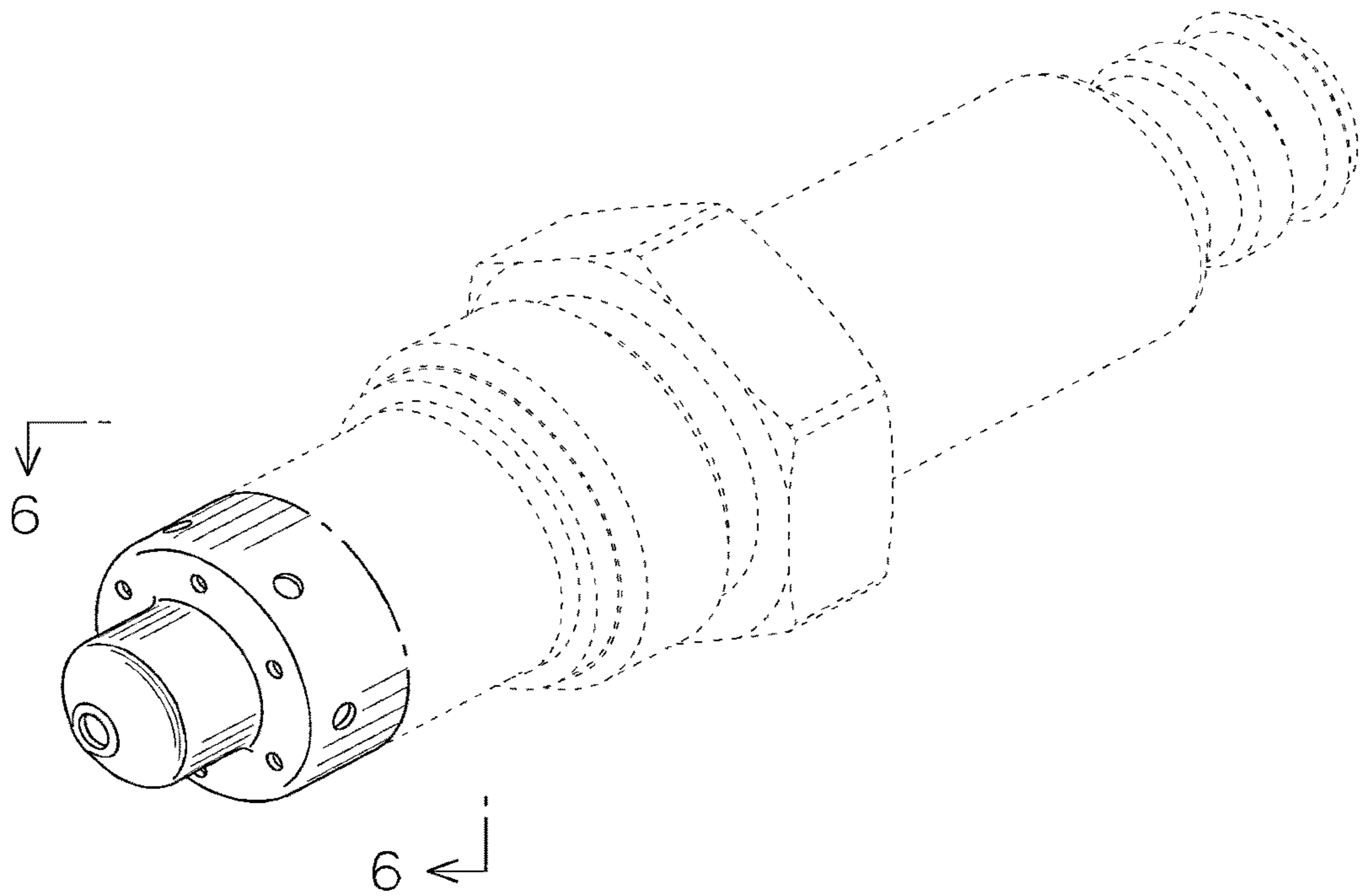


Fig.2

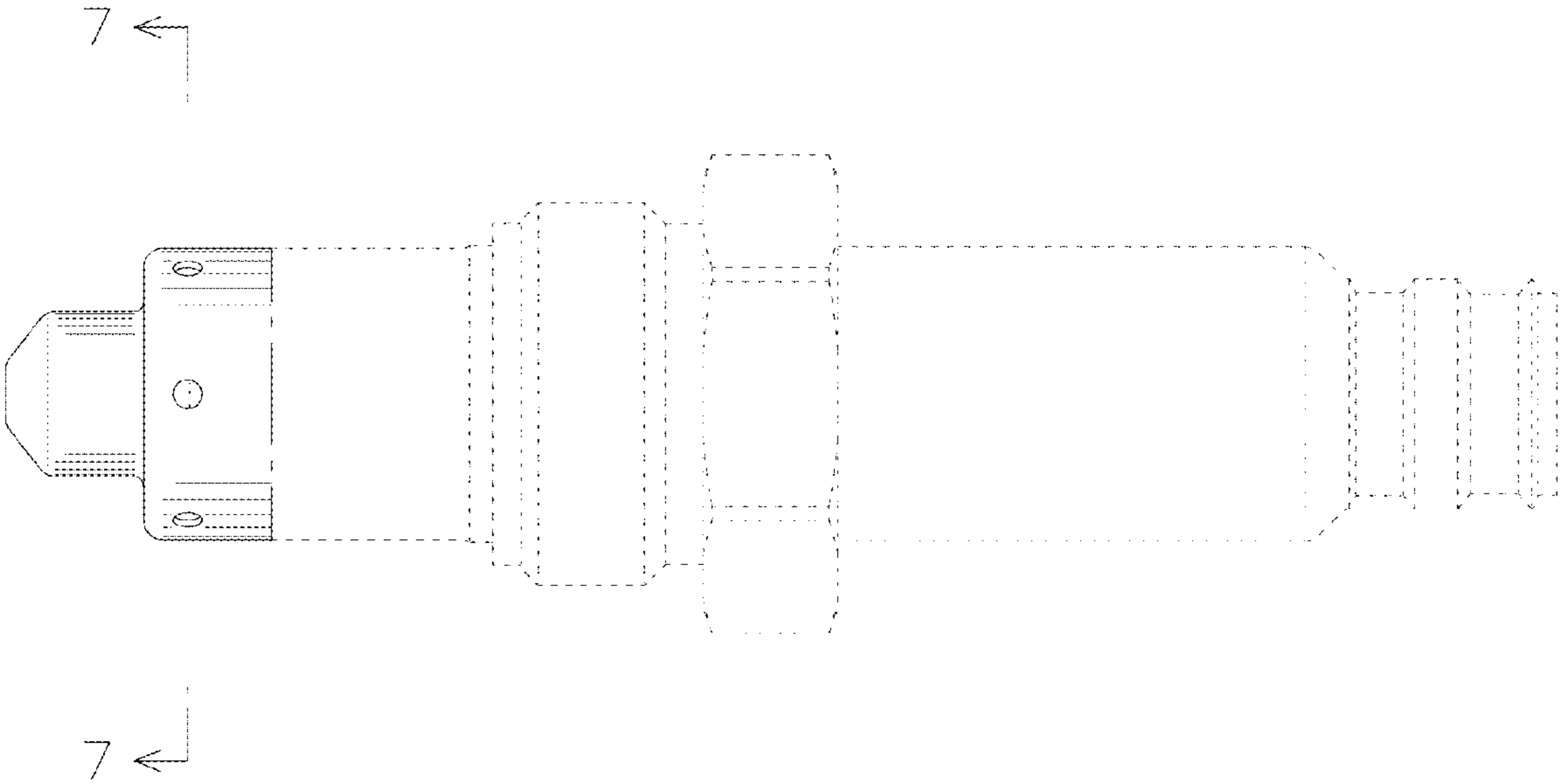


Fig. 3

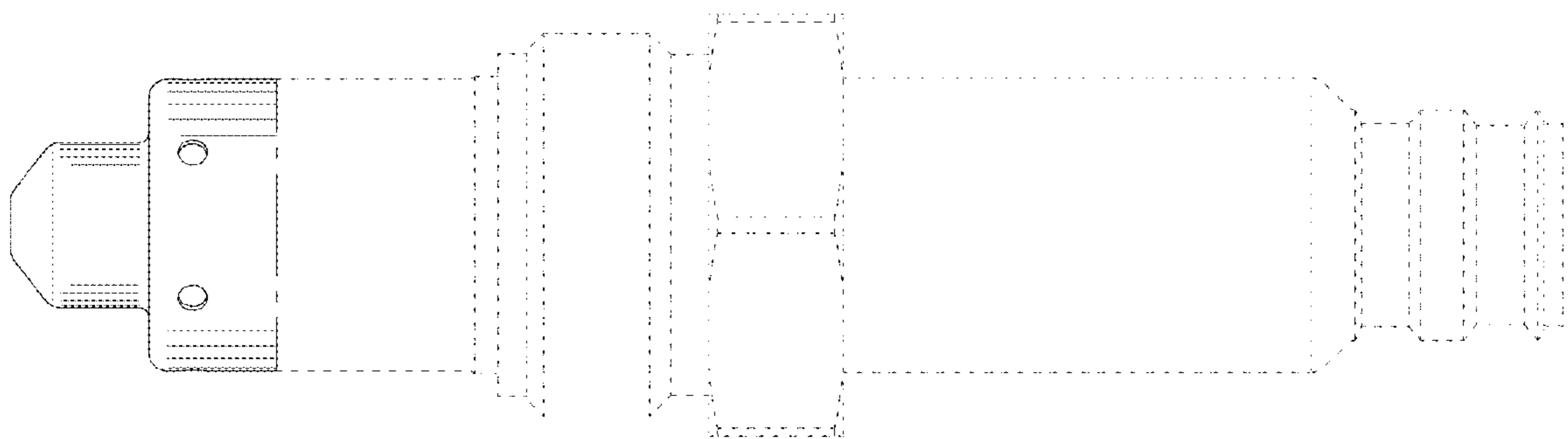


Fig. 4

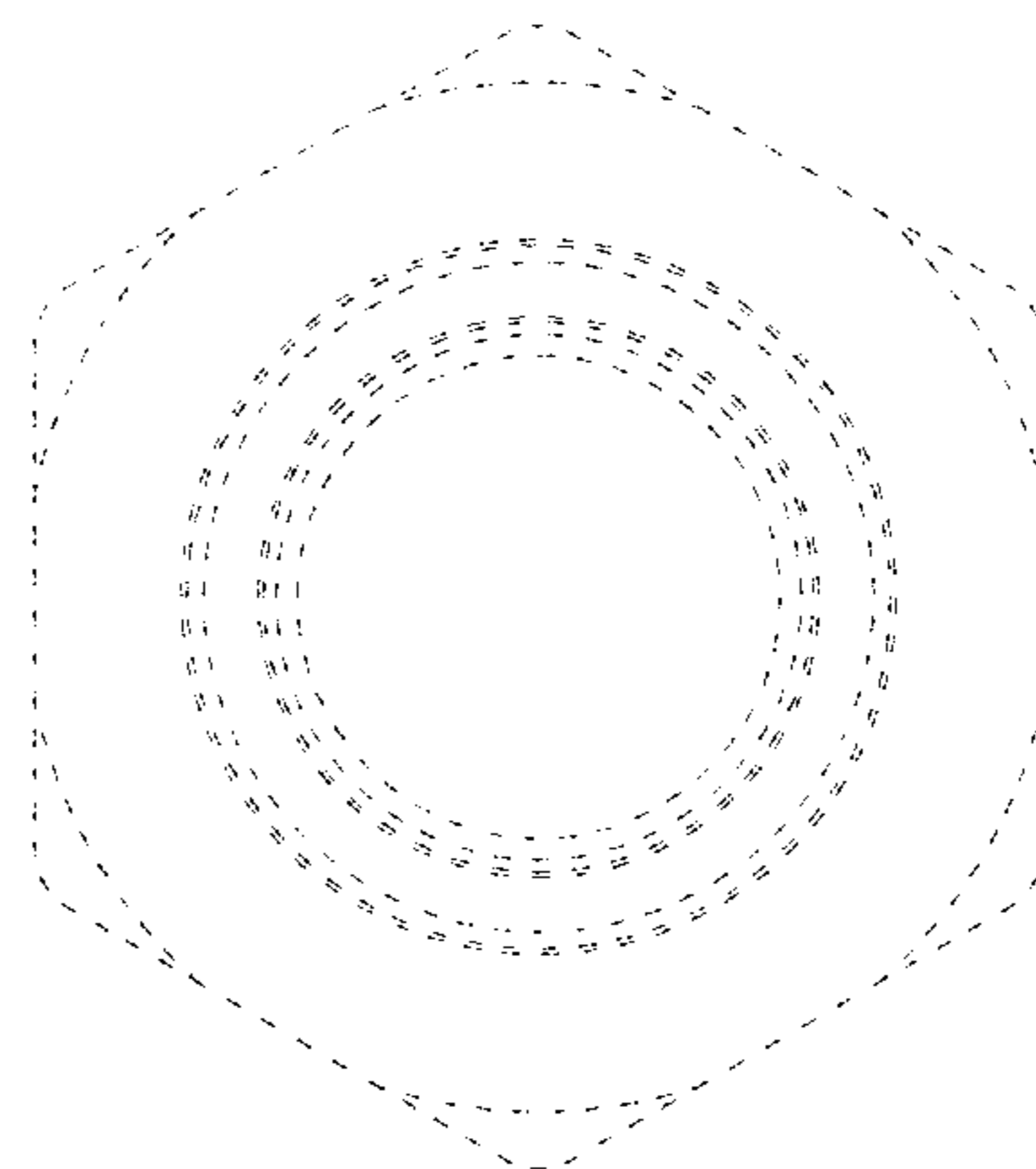


Fig. 5

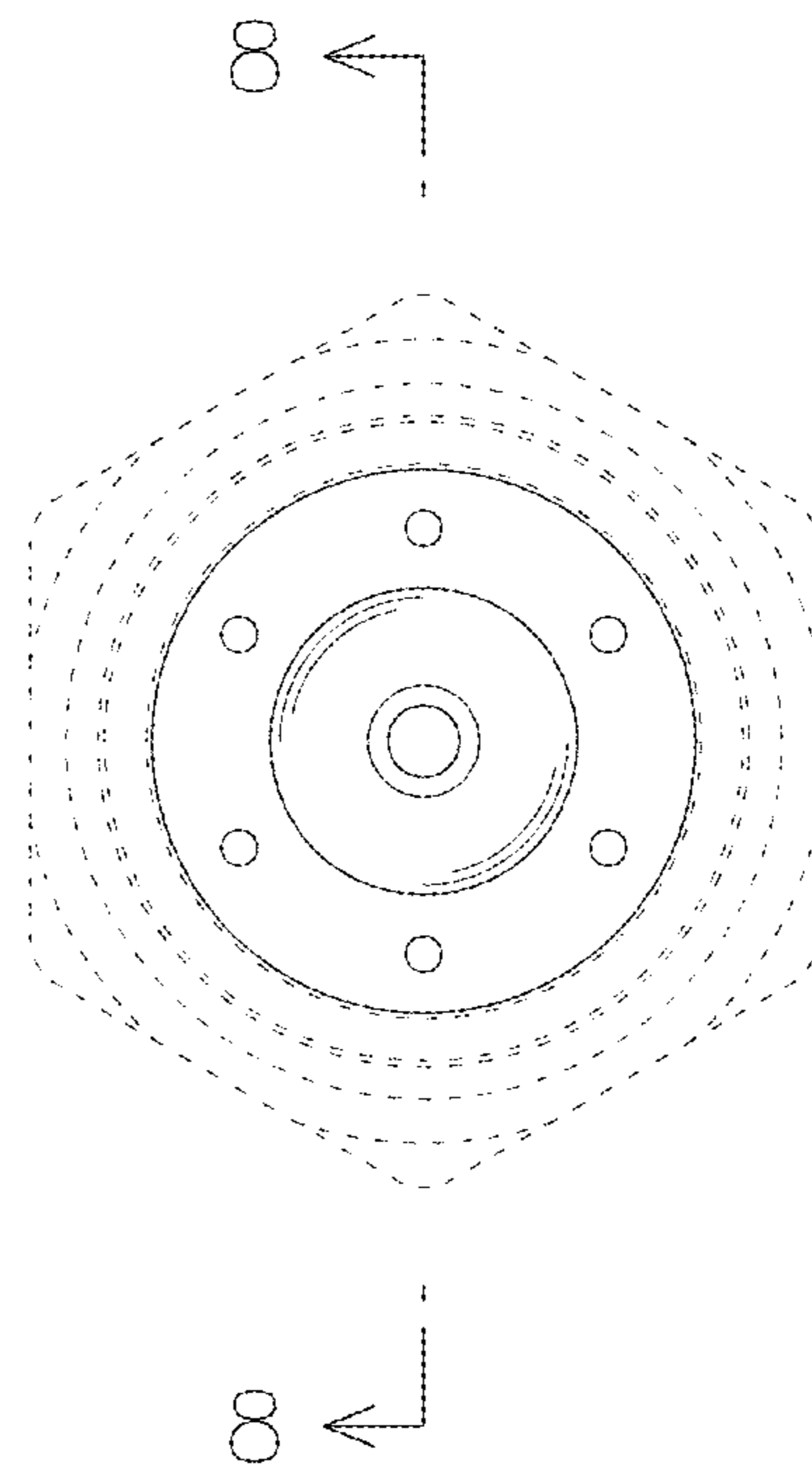


Fig. 6

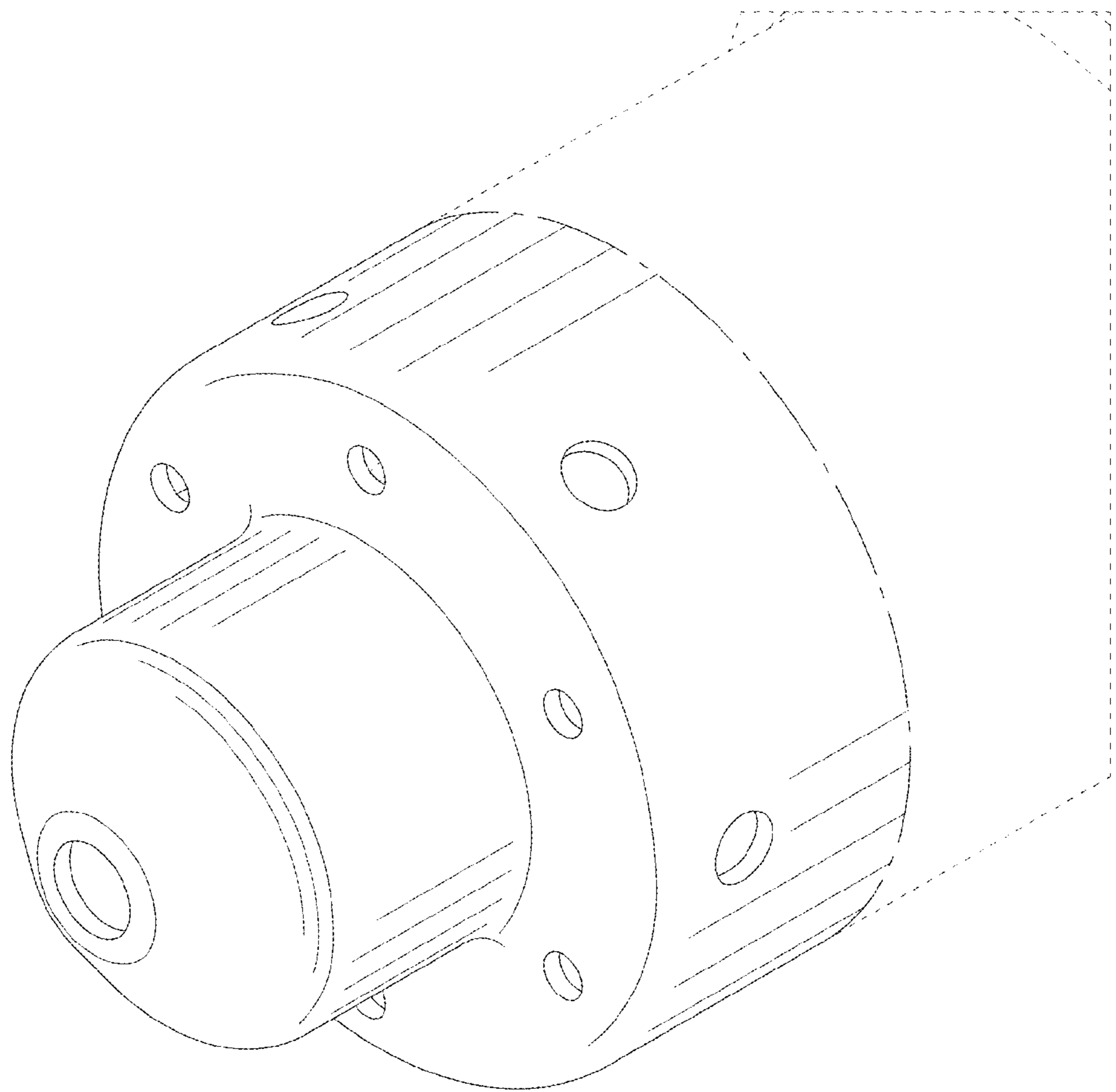




Fig. 7

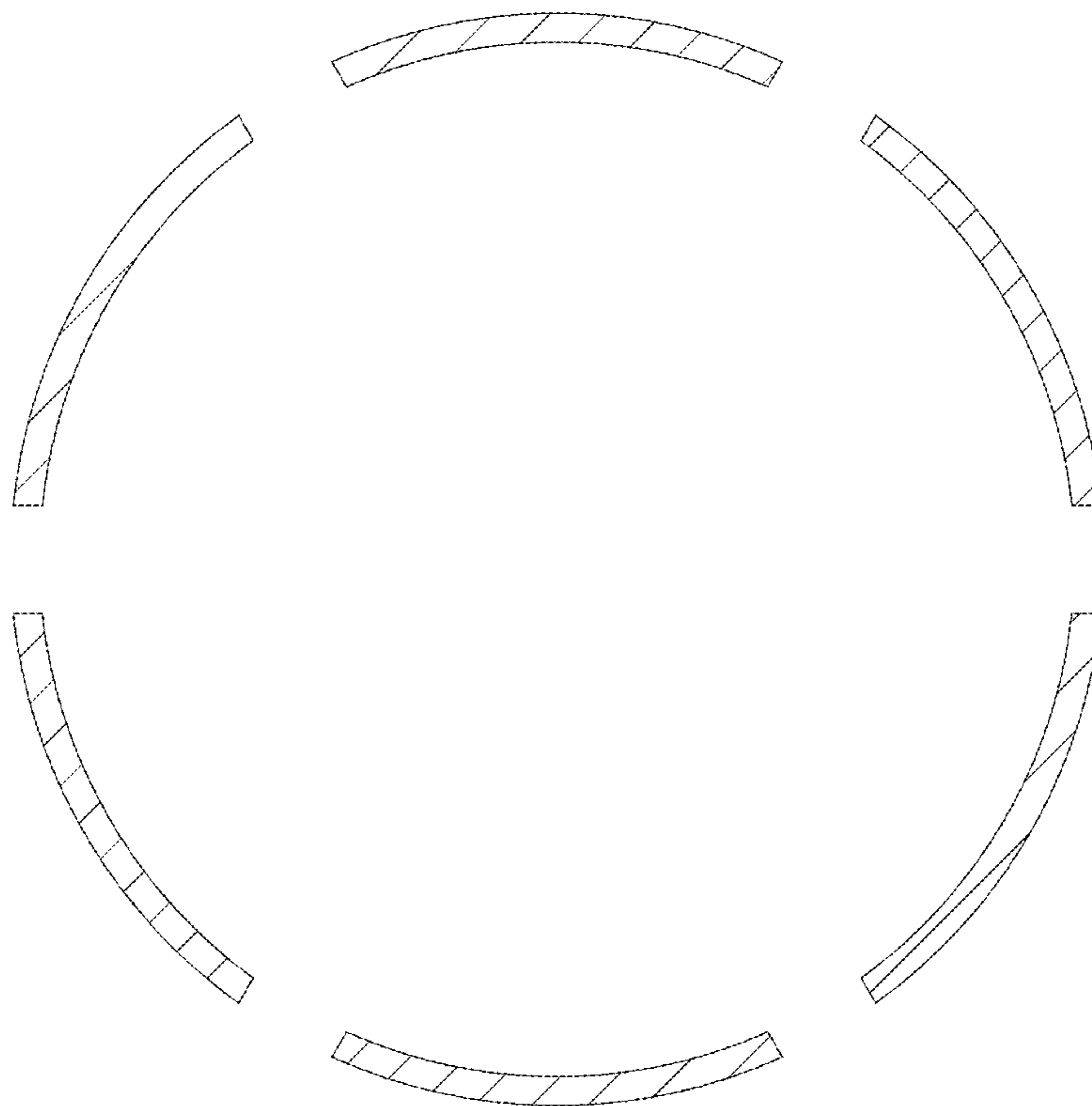


Fig. 8

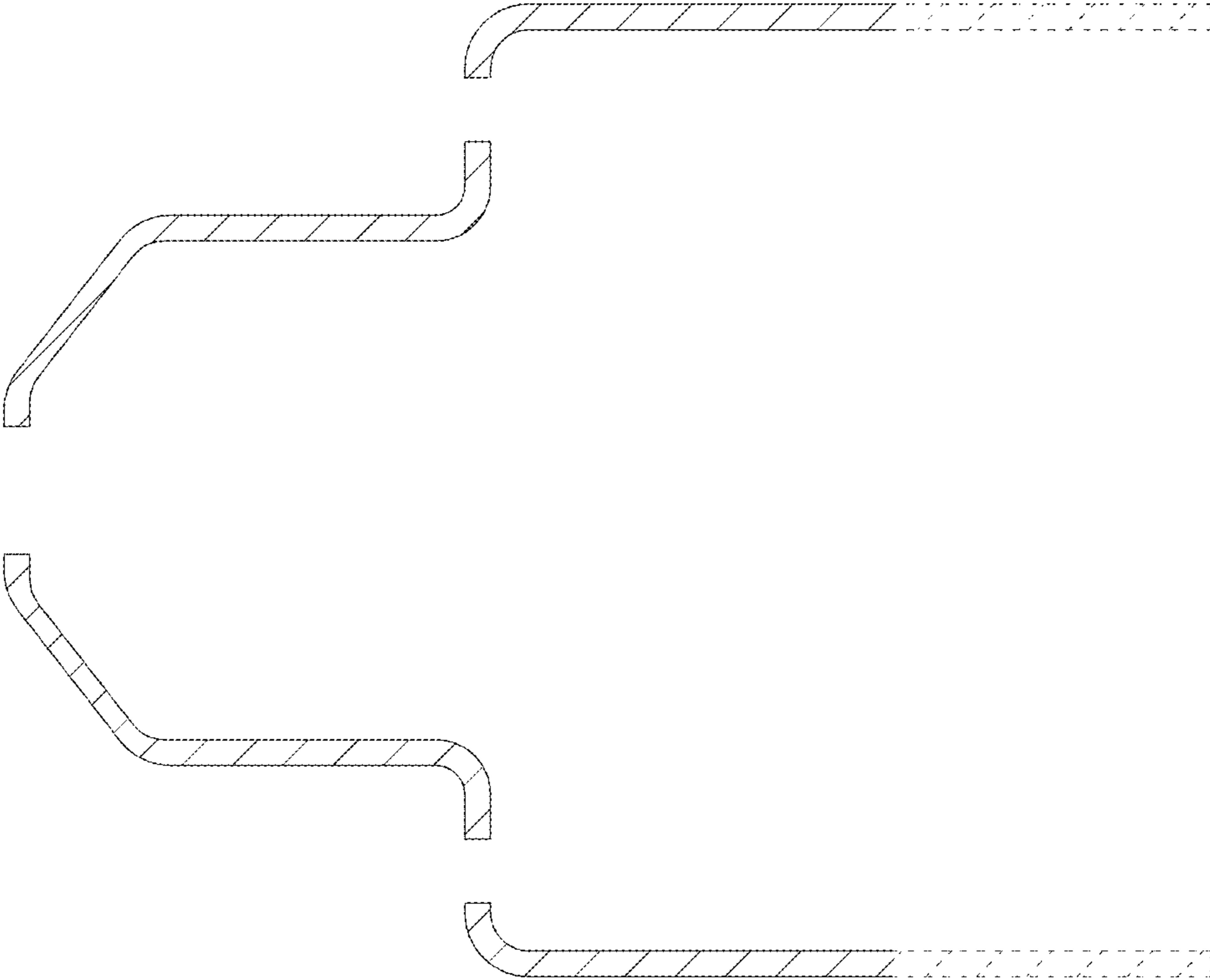


Fig. 9

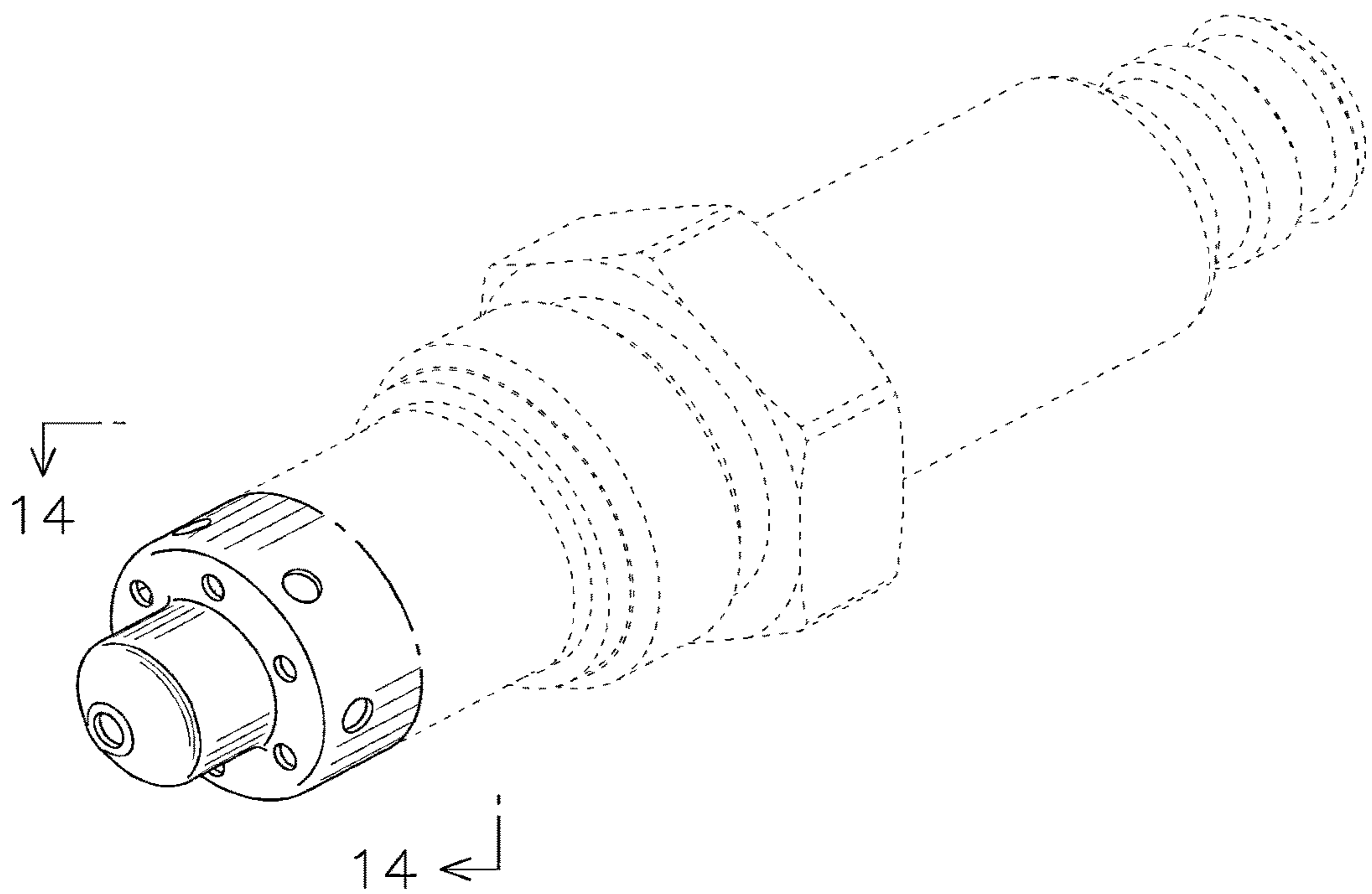


Fig.10

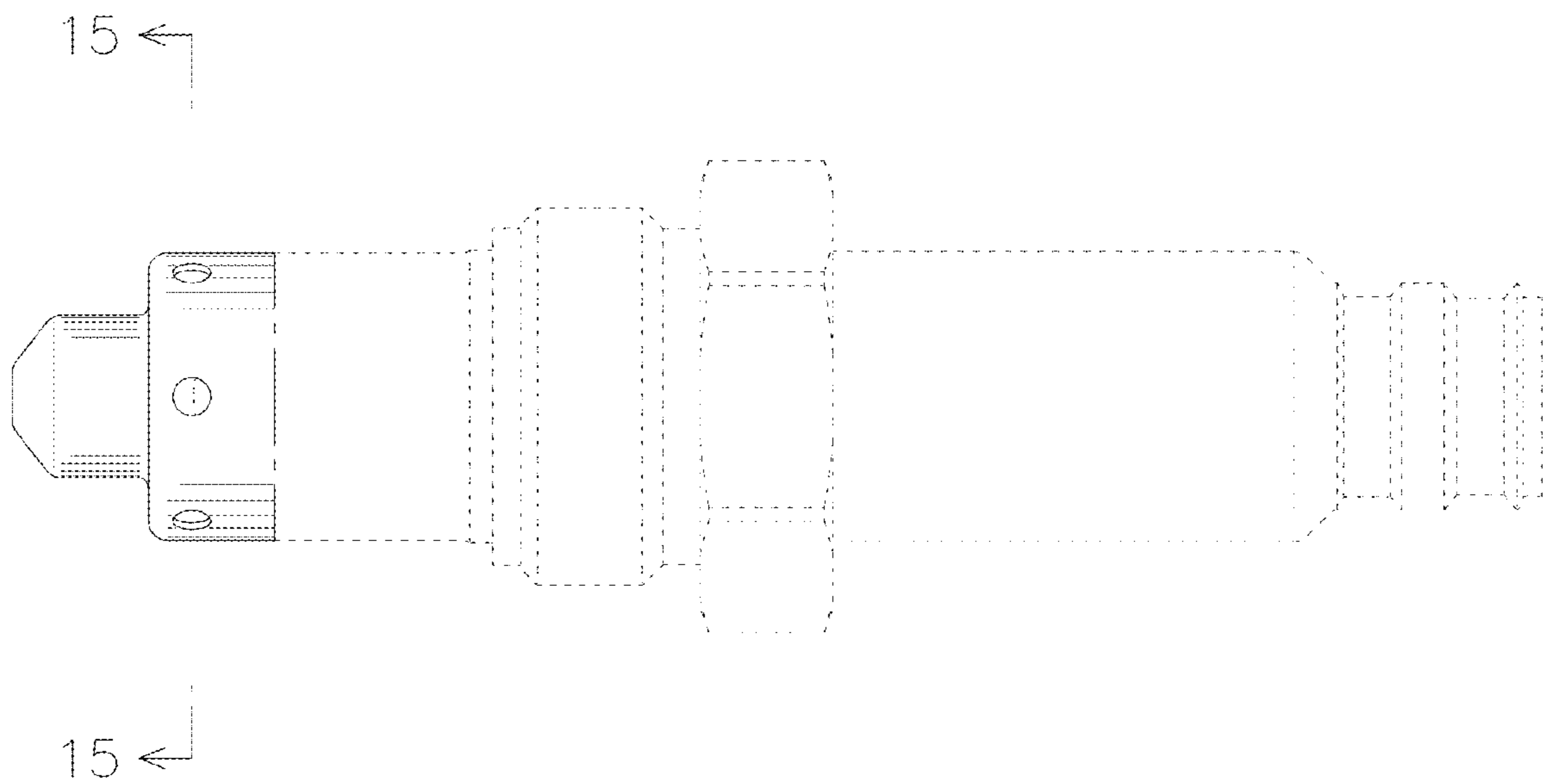


Fig.11

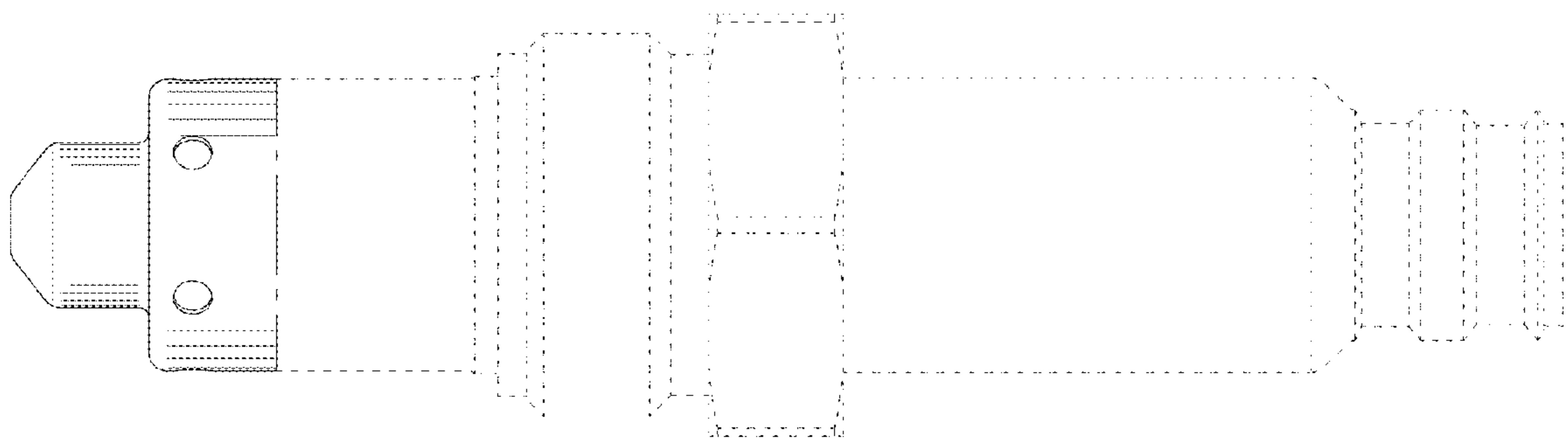


Fig.12

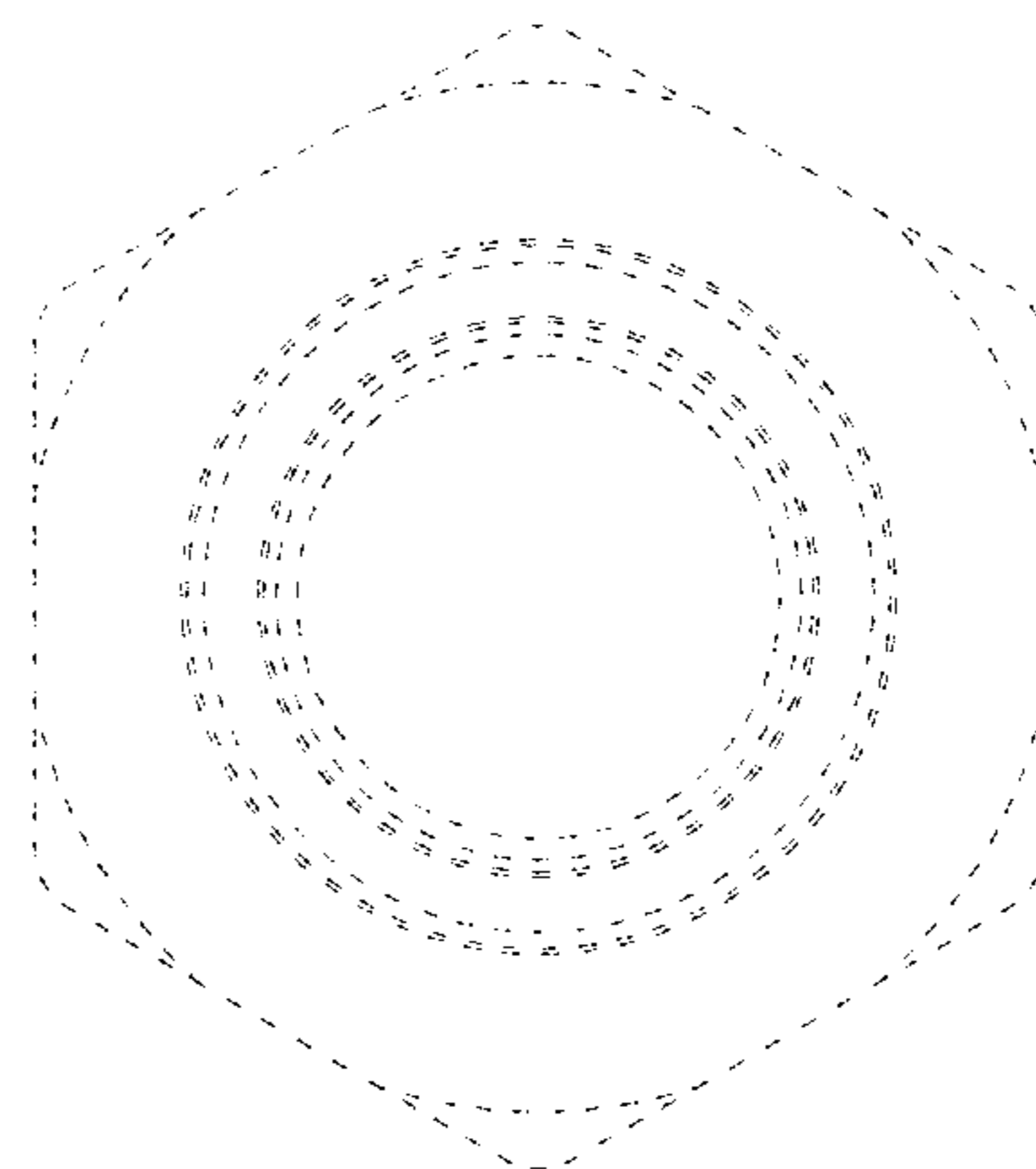


Fig.13

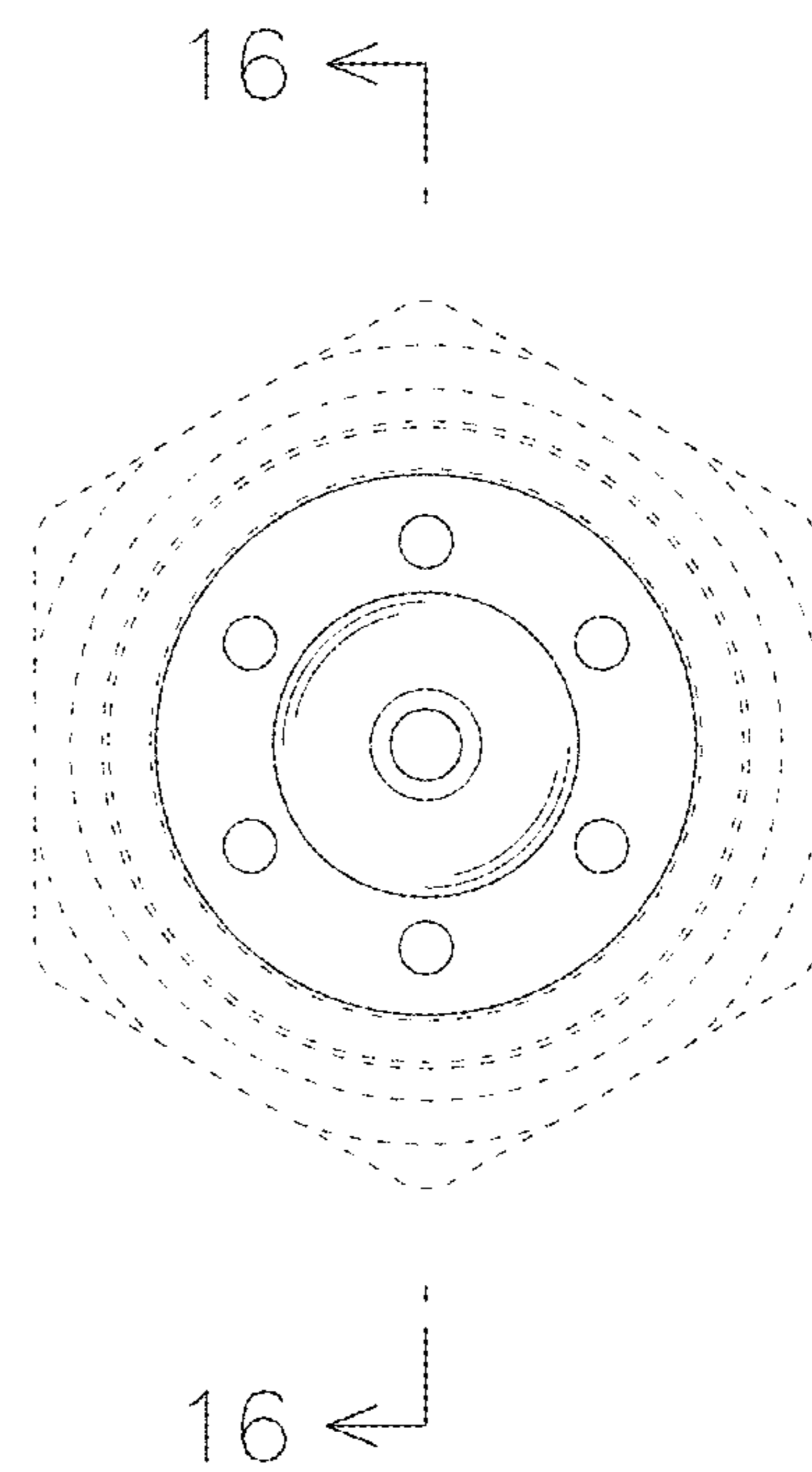


Fig. 14

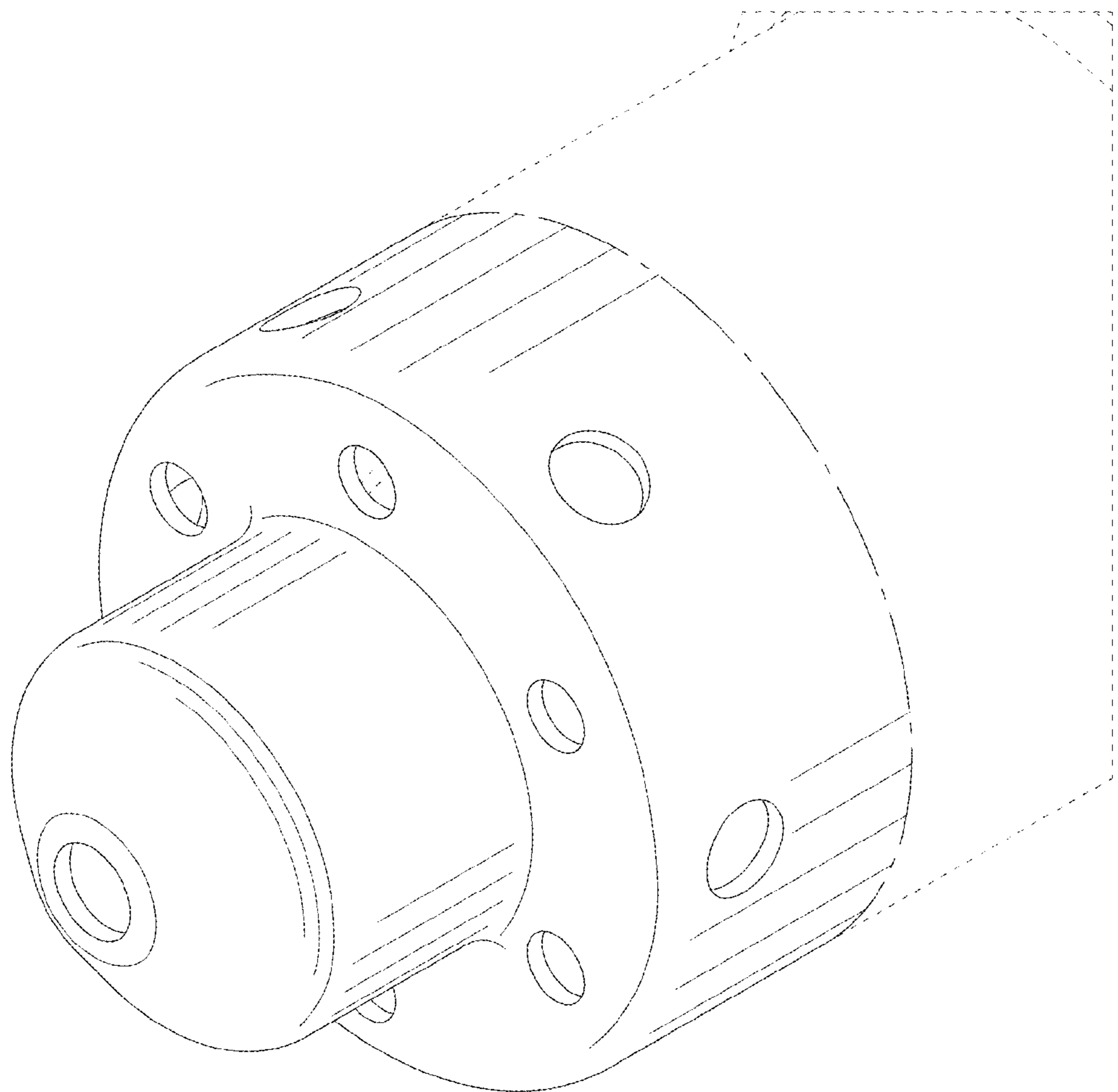




Fig.15

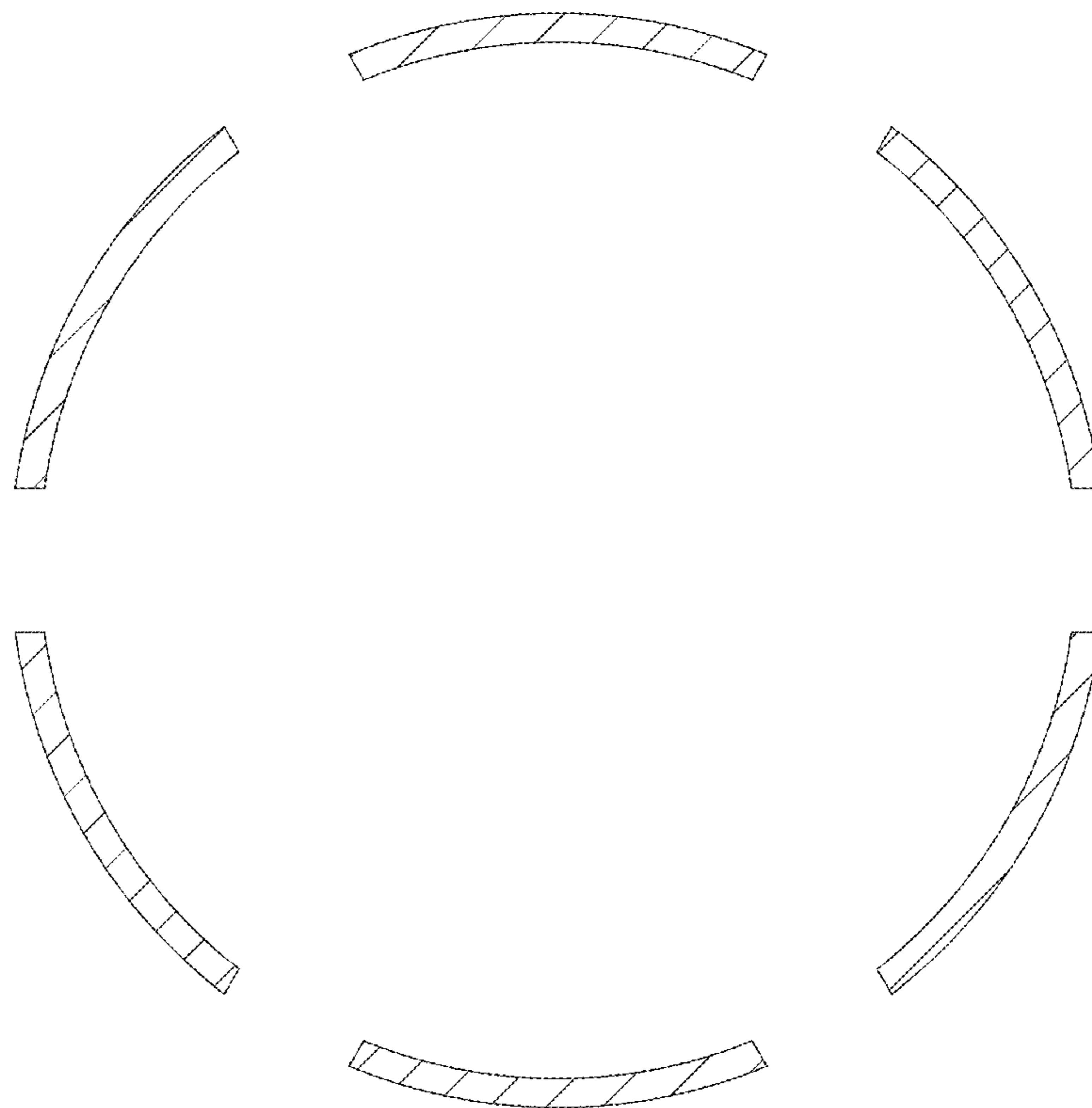


Fig.16

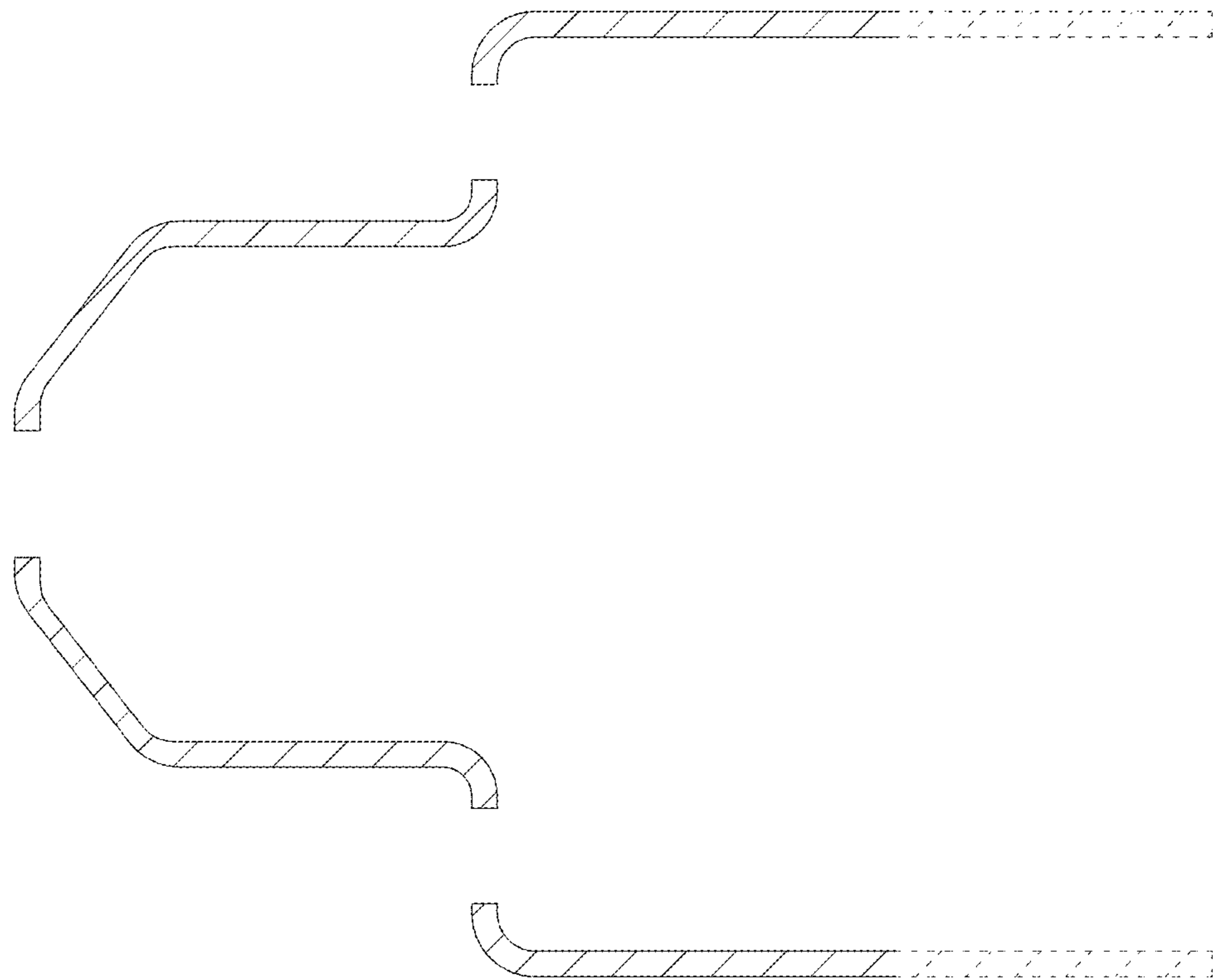


Fig.17

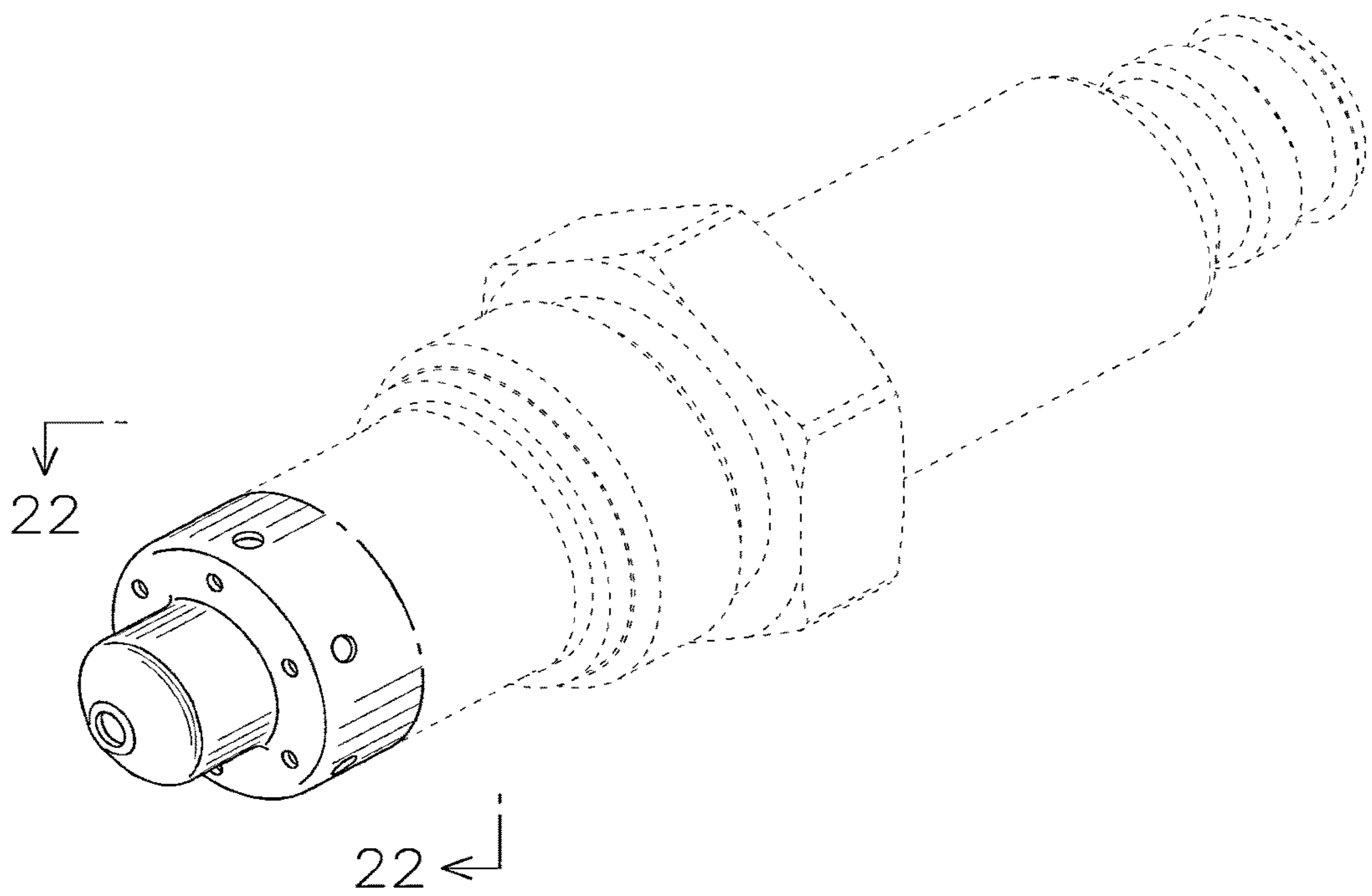


Fig.18

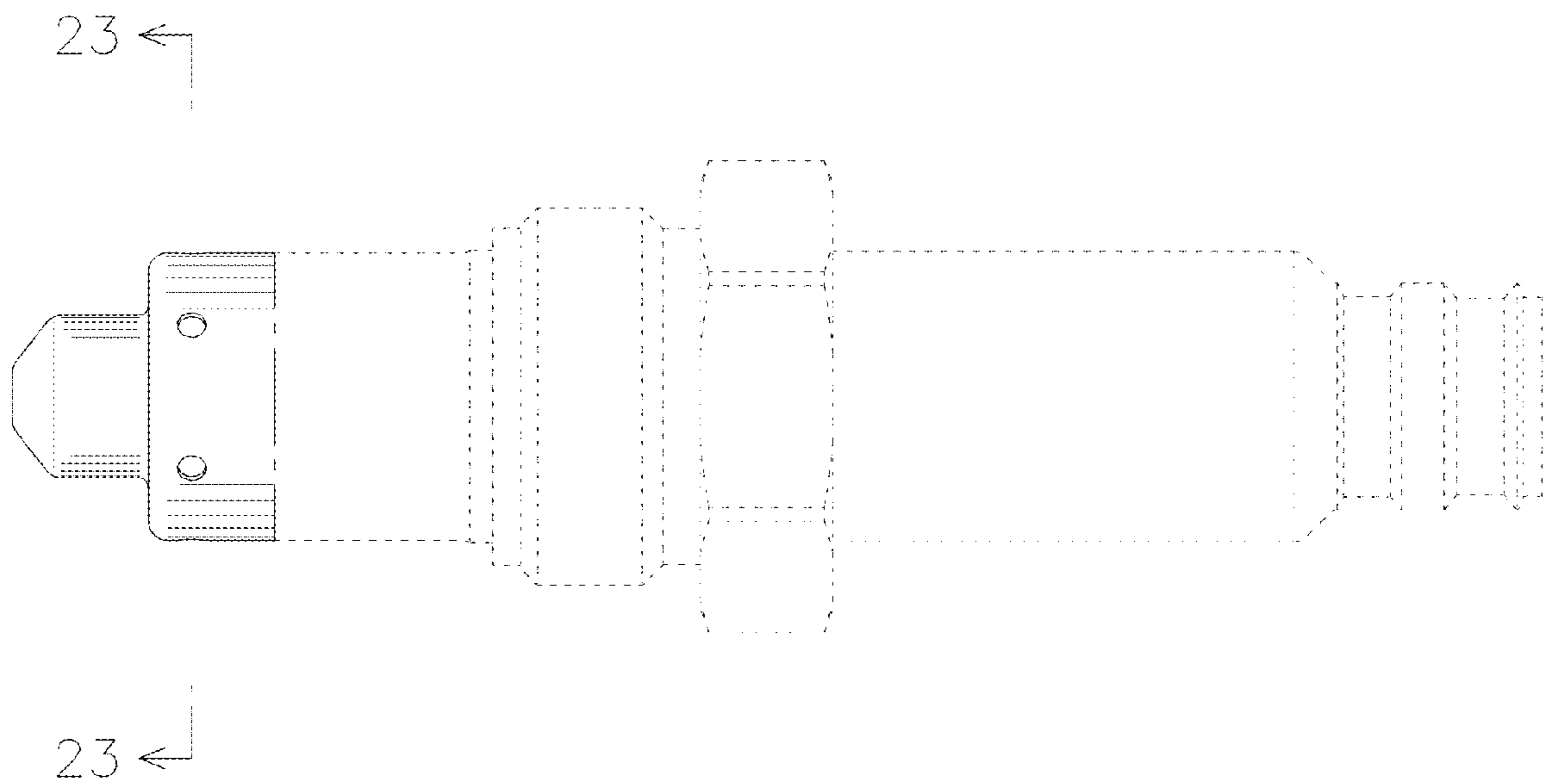


Fig.19

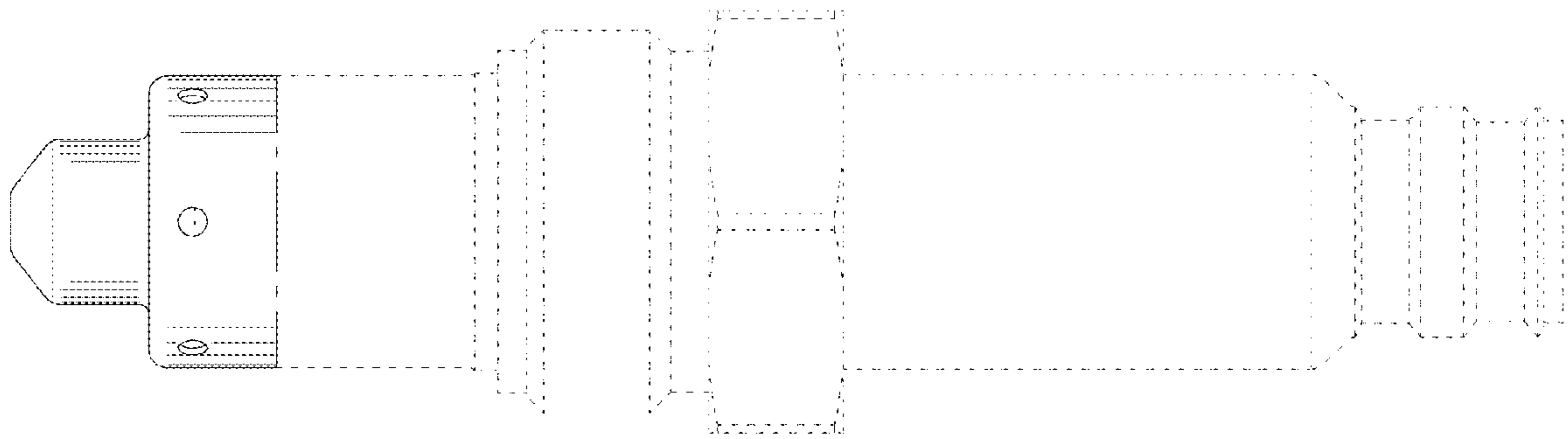


Fig. 20

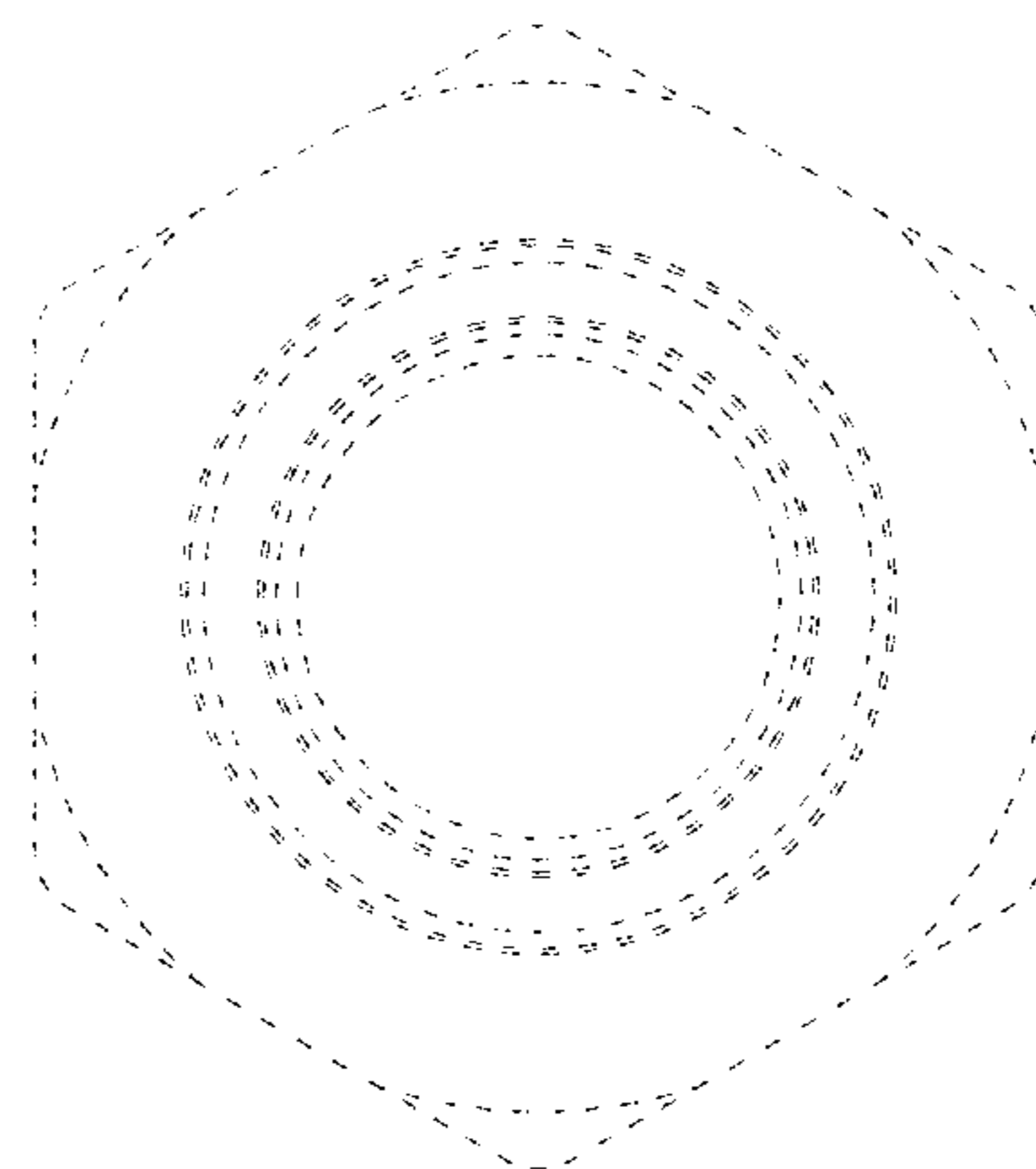


Fig. 21

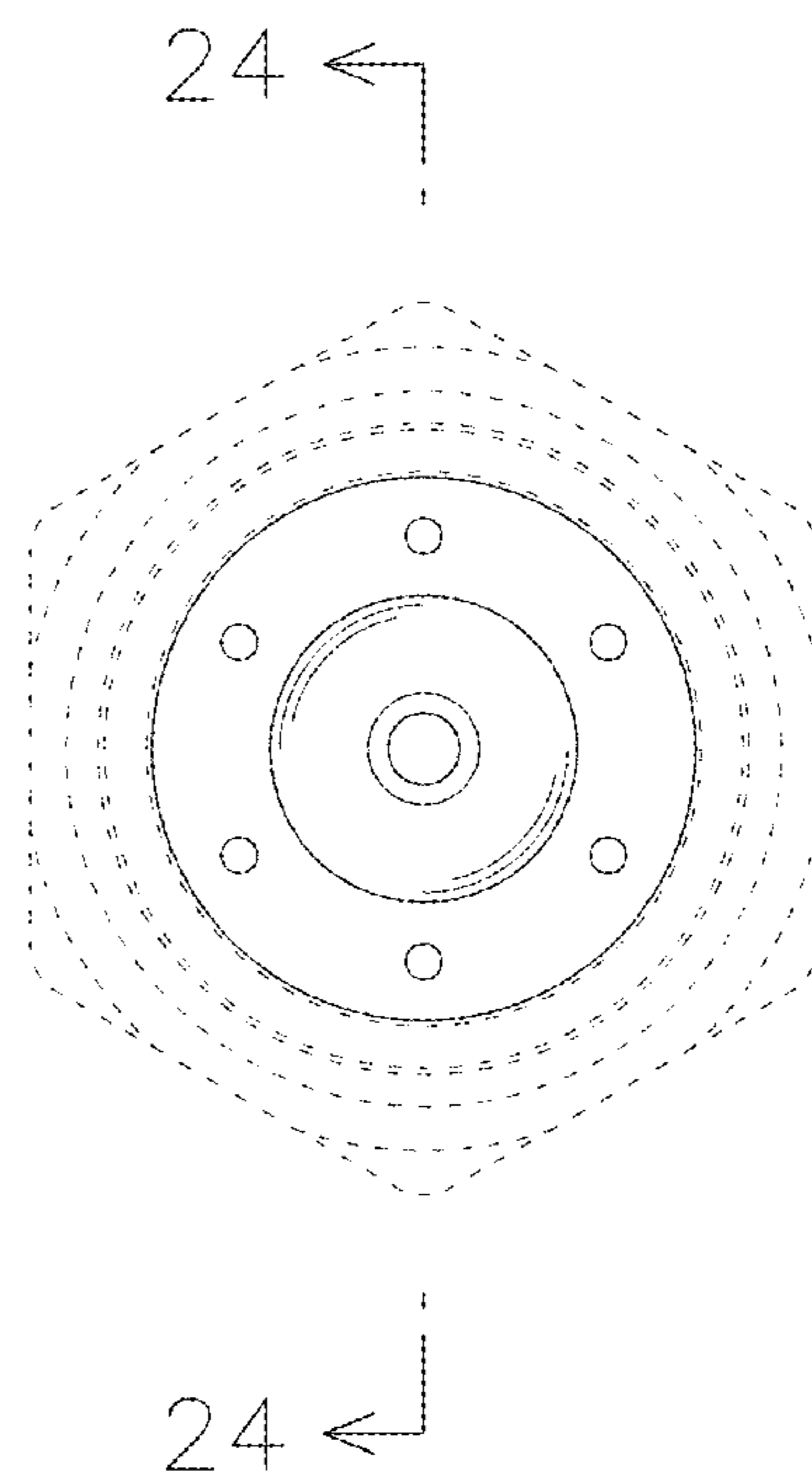


Fig. 22

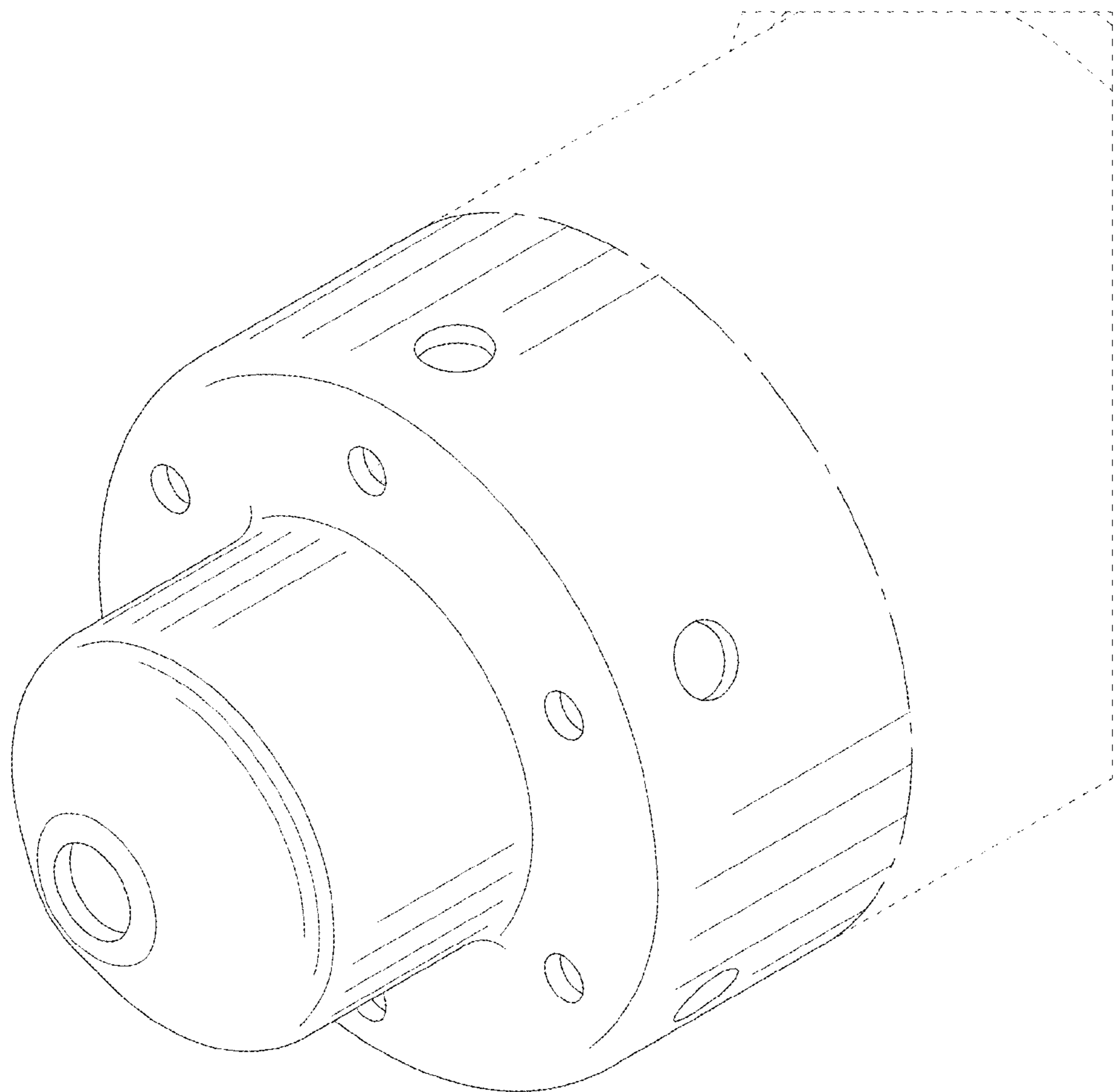




Fig. 23

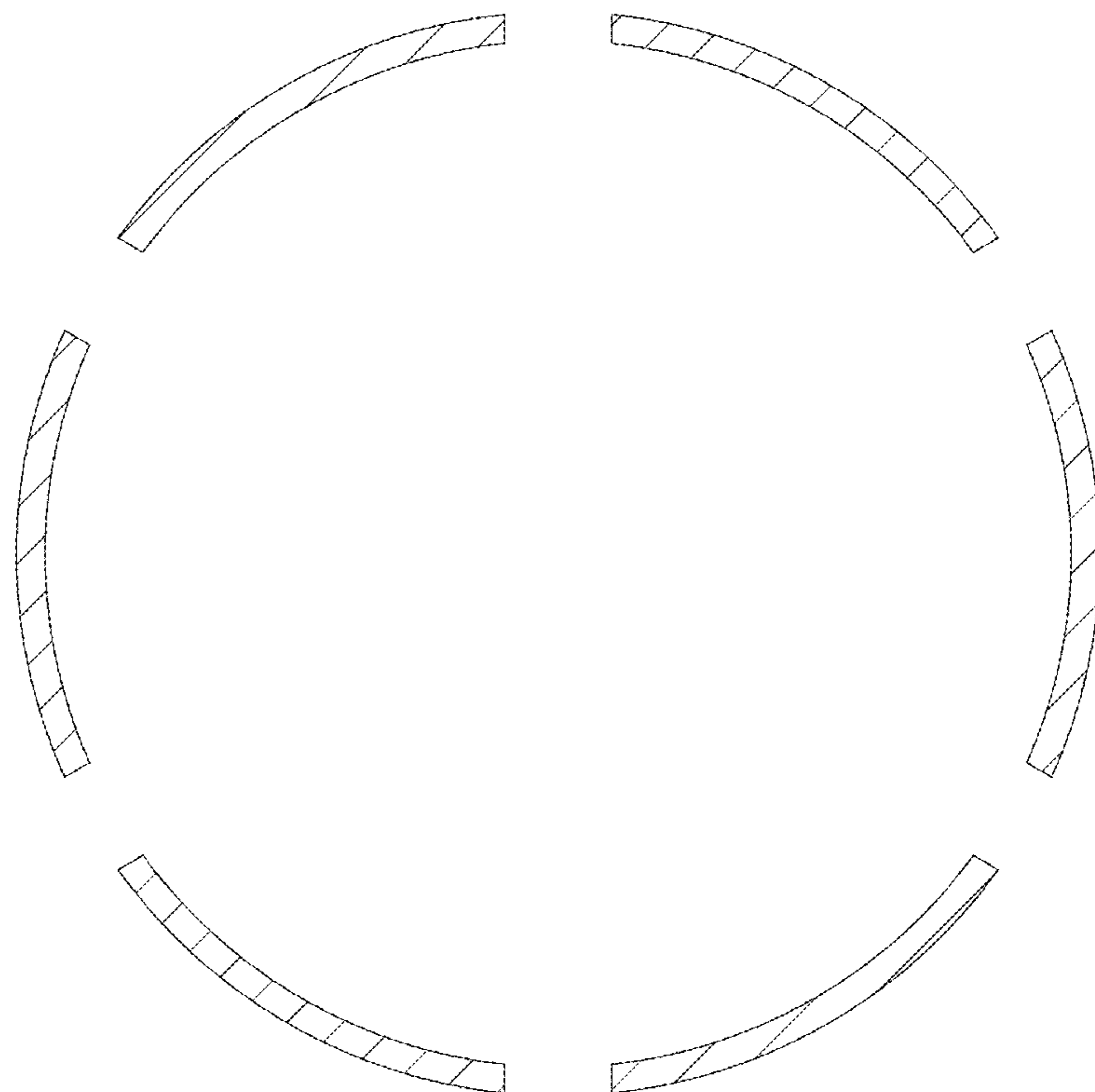


Fig. 24

